

NATIONAL WETLAND INVENTORY

NOTES TO USERS

SANTA ANA NW and SW

NATIONAL WETLANDS INVENTORY MAP

A. INTRODUCTION

The U.S. Fish & Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. is the classification system used to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classification system.

B. PURPOSE

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species, and (3) to explain local geography, climate, and wetland communities.

C. STUDY AREA

Geography:

The study area is located in southern California with the Coachella Valley separating two mountain ranges. The ecoregions of the maps is dominated by the California Chaparral Province (no section). This province is characterized by the east edge of the Coast Mountain Range which have steep, unstable slopes with sharp crests. The San Bernadino (north), San Jacinto (central), and Santa Rosa (central) Mountains are all part of this range. Elevations may rise from 300-6,000 feet above sea level. The valley is a part of the American Desert Province, Creosote Bush-Bur Sage Section (central). These two sections are similar except for some biological differences. The province is described as having undulating plains with isolated mountains and buttes. The elevation in the valley ranges from 300 feet above sea level to 230 feet below sea level. The Little San Bernardino Mountains compose the majority of the Cresote Bush Section which includes some of the Josnua Tree National Monument.

The main drainages of the map area are the White River and San Felipe Creek. Irrigation canals criss-cross the valley floor with the Coachella Canal the main source of water. The northeast corner of the Salton Sea is located on the east central edge of the two Santa Ana maps.

### Climate:

The climate is typified by arid-hot summers and mild winters. The annual range of the temperature is moderate with an average annual temperature of 73 degrees in the Imperial Valley. The average annual temperature in the mountainous area is approximately 65 degrees. Rainfall is very sporadic with most of it falling in the summer months. Orographic precipitation makes up most of the rain in the mountains. Both temperature and precipitation values change with elevation. The most pronounced effect is on the east and north slopes of the San Jacinto mountains. There, precipitation totals decrease and temperature increases with decreased elevations.

One of the biggest factors in the wetlands is the amount of evapotranspiration. In the Imperial Valley floor the rate is as high as six feet per year. This is an even larger effect with an average of 2.8 inches of rain per year over the last 54 years.

### Vegetation:

Upland vegetation will consist of cacti and thorny shrubs though not limited to these types only. Wetland vegetation may include such species as phragmites, salt cedar, willow, cattails and cottonwood.

### Soils:

There are two principal groups of soils in this area; 1) Excessively drained to well drained, nearly level to very steep soils on alluvial fans, terraces, and mountains rimming the Coachella Valley. 2) Those soils which are associated with lacustrine basins.

The first group of associations consist of sands to silty clays formed in the coarse to fine textured alluvium. The soils are highly stratified with finer or coarser textured material and containing varying amounts of gravel, stones, and cobbles. The five associations in this group make up about 66 percent of Riverside county in the Coachella Valley.

Imperial soils are well drained and moderately well drained. They generally have a surface layer of silty clay about 17 inches thick and an underlying area of clay that extends to a depth of more than 60 inches. These soils are moderately to strongly saline. The water table fluctuates between 1 to 5 feet in about 25 percent of the total acreage of the Imperial soils.

Carsitas soils are excessively drained. The water table is between 2 and 4 feet in about 15 percent of the Carsitas soil associations.

Myoma soils have a seasonal fluctuation of 1.5 and 4 feet for the water table.

The Salton-Indio-Gilman association is nearly level, somewhat poorly drained to well drained silty clay loams, very fine sandy loams, fine sandy loams, and silt loams in lacustrine basins. They are formed in the deposits of Old Lake Coachella. These soils are very deep. The soils are calcareous, mildly to strongly alkaline, and strongly to slightly saline. The content of organic matter is very low and decreases with depth.

TABLE 1: NWI CLASSIFICATION FOR SANTA ANA NW and SW, CALIFORNIA

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION/SUBSTRATE
R2UB (F,G,H)	Riverine, lower perennial, unconsolidated bottom	Open water, River, Stream	Unvegetated mud, sand gravel
R3UB (F,G,H)	Riverine, upper perennial, unconsolidated bottom	Open water, River, Stream	Unvegetated mud, sand gravel
R4SB (J,A,C,F)	Riverine, intermittent, stream bed	Washes, Intermittent Stream	Unvegetated mud, sand gravel
L1UB (F,G,H)	Lacustrine, limnetic unconsolidated bottom	Open water, Lake	Unvegetated mud, sand, gravel
L2US (A,C)	Lacustrine, littoral unconsolidated shore	Lake bed, Lake Shore	Unvegetated mud, sand, gravel
PUB (F,G,H)	Palustrine unconsolidated bottom	Pond bottom, Open water	Unvegetated mud, sand gravel
PUS (J,A,C)	Palustrine unconsolidated shore	Pond shore, Pond bed	Unvegetated mud, sand gravel
PEM (J,A,C,F)	Palustrine emergent	Marsh, Wet Meadow	Cattails ( <u>Typha</u> sp.) Giant cane ( <u>Phragmites</u> sp.) Wire grass ( <u>Juncus</u> <u>balticus</u> ) Bullrush ( <u>Scirpus</u> <u>acutus</u> )

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION/SUBSTRATE
PSS (J,A,C,F)	Palustrine scrub shrub	Shrub wetland	Willow ( <u>Salix</u> sp.) Salt cedar ( <u>Tamarix</u> sp.) Arrow weed ( <u>Pluchea sericea</u> )
PFO (A,C,F)	Palustrine, forested broad leaves deciduous	Forested wetland	Willow ( <u>Salix</u> spp.) Cotton wood ( <u>Populus fremonti</u> ) Sycamore ( <u>Plantanus recemosa</u> )

## Water Regime Description

- (A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.
- (B) Saturated - The substrate is saturated to surface for extended periods during the growing season, but surface water is seldom present.
- (C) Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is very variable, extending from saturated to a water table well below the ground surface.
- (F) Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.
- (G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.
- (H) Permanently Flooded - Water covers land surface throughout the year in all years.
- (K) Artificially Flooded - The amount and duration of flooding is controlled by means of pumps or siphons in
- (U) Unknown--The water regime is not known.  
combination with dikes or dams.

## F. MAP PREPARATION

The wetland classification that appears on the Santa Ana NW and SW National Wetlands Inventory (NWI) Base Map (Figure 1) is in accordance with Cowardin et. al. (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The photography was taken during January, February, 1983, and March of 1984.

Field checks of areas found within the Santa Ana NW and SW photography were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation types and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, SCS soil surveys, vegetation, and ecoregional information.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and

season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photo interpretation and drafting were completed by Martel Laboratories, Inc., St. Petersburg, Florida.

#### G. SPECIAL MAPPING PROBLEMS

The May 1984 photography was well leafed out, thus making interpretation of the wetland/upland break difficult. Numerous non-hydric soils were encountered in the bottomlands (many were checksited on wetland) as well as hydric soils. The wetland/upland signature differences are somewhat consistent when topographic and soil survey correlations are made. Usually a bright red signature was found for uplands and a grey red for wetlands, although the reverse was also found. To help resolve this problem, soil surveys (when available), topographic maps and check site data will be used to help determine the wetland/upland break.

#### H. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

Regional Wetland Coordinator (ARD-E)  
U.S. Fish and Wildlife Service - Region I  
Lloyd 500 Bldg., Suite 1650  
500 NE Multnomah St.  
Portland, OR

To order maps only, contact:

National Cartographic Information Center  
U.S. Geological Survey  
507 National Center  
Reston, VA 22092

Maps are identified by the name of the corresponding USGS 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the U.S. Geological Survey.



#### LITERATURE CITED

Bailey, Robert G. 1980. Description of the Ecoregions of the United States; United States Department of Agriculture Miscellaneous Publications.

Cowardin, L.M.; V. Carter; F.C. Golet and E.T. LaRue; 1979. Classification of Wetland and Deepwater Habitats of the United States.

Soil Survey of Riverside County, California, Coachella Valley Area; 1977, United States Department of Agriculture, Soil Conservation Service.

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